<table>
<thead>
<tr>
<th>PŘEDMĚT</th>
<th>VYUČUJÍCÍ</th>
<th>JMÉNO STUDENTA</th>
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</thead>
<tbody>
<tr>
<td>Diplomová práce 125DPM</td>
<td>Ing. Zuzana Veverková, Ph.D.</td>
<td>Bc. Daniel Hora</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>SEMESTR</th>
<th>OBSAH:</th>
<th>FORMÁT</th>
<th>MEŘÍTKO</th>
<th>DATUM</th>
<th>Č. VÝKR.</th>
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<td>ZIMNÍ 2019</td>
<td>SCHÉMA ZAPOJENÍ</td>
<td></td>
<td></td>
<td>1.1.2020</td>
<td>D.1.5.c.08</td>
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</table>
# Toshiba Design AIRS - Index

## Diplomová práce

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</table>
Notes: Equivalent length is calculated by coefficients:

- 1,2,3,4.NP and VZT JEDNOTKA

The user is responsible for ensuring that all data entered is correct.

It is the responsibility of the consultant or contractor, to verify and confirm that the equipment selection and system design is correct before installation.

Please note that in the event of future system expansion being allowed for in the system design or a change in cooling/heating requirements, a re-evaluation of the air conditioning system must be made prior to final installation.
System Information
- Indoor Units: 12 of 27
- Capacity: 110%
- Total Pipe Length: 88.5 m
- Indoor Cap. Tot./Sen.: 31.4 kW/23.2 kW
- Indoor Cap. Heat: 28.59 kW
- Building diversity: 0%

Outdoor/Indoor Legend
- Model Name (Capacity Code)
  - *Room name* Corrected Capacity  Tot./Sens./ Heat.
- Project: 1.NP

Piping Legend
- Actual Length
- Liquid / Suction Gas diameters
- Note: It is the responsibility of the consultant or contractor, to verify and confirm that the equipment selection and system design is correct before installation.

Branches Legend
- a: RBM-BY55E (x8)
- b: RBM-BY105E (x3)

Elevation: 7.5m below Outdoor Unit
### System Information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Indoor Units</td>
<td>12 of 27</td>
</tr>
<tr>
<td>Capacity</td>
<td>110.0%</td>
</tr>
<tr>
<td>Total Pipe Length</td>
<td>88.5 m</td>
</tr>
<tr>
<td>Indoor Cap. Tot./Sen.</td>
<td>31.4 kW/23.2 kW</td>
</tr>
<tr>
<td>Indoor Cap. Heat.</td>
<td>28.59 kW</td>
</tr>
<tr>
<td>Building diversity</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Outdoor/Indoor Legend

<table>
<thead>
<tr>
<th>Model Name (Capacity Code)</th>
<th>Corrected Capacity</th>
<th>Tot./Sens./Heat.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMY-MAP1206HT8P-E (12 HP)</td>
<td>31.4</td>
<td>28.59 kW</td>
</tr>
</tbody>
</table>

### Piping Legend

- Actual Length
- Liquid / Suction Gas diameters

Note: It is the responsibility of the consultant or contractor, to verify and confirm that the equipment selection and system design is correct before installation.

### Branches Legend

- **a** RBM-BY55E (x8)
- **b** RBM-BY105E (x3)

### Floor: 4.NP - STŘECHA

**Elevation:** 0m

**System Information:**
- **Indoor Units:** 12 of 27
- **Capacity:** 110.0%
- **Total Pipe Length:** 88.5 m
- **Indoor Cap. Tot./Sen.:** 31.4 kW/23.2 kW
- **Indoor Cap. Heat.:** 28.59 kW
- **Building diversity:** 0%

**Piping Legend:**
- Actual Length
- Liquid / Suction Gas diameters

Note: It is the responsibility of the consultant or contractor, to verify and confirm that the equipment selection and system design is correct before installation.

**Branches Legend:**
- **a** RBM-BY55E (x8)
- **b** RBM-BY105E (x3)
Toshiba Design AIRS - Piping and Wiring Diagram

1.NP

Control Wiring Legend

Outdoor - Indoor Control Wiring* U1/U2 1.5mm² up to 1000m & 2.5mm² up to 2000m
Central Control Wiring* U3/U4 1.5mm² up to 1000m & 2.5mm² up to 2000m
Outdoor Units Control Wiring* U5/U6 0.5mm² to 2.5mm² up to 500m (Wireless)
Remote Controller Wiring* A/B 0.5mm² to 2.5mm² up to 500m (Wireless) Remote Controller up to 400m. Group Control wiring is up to 200m

* Note: Pipe diameters in mm

Symbol Legend

Branches Legend
RBM-BY105E a (x3)
RBM-BY55E b (x8)

*Note: Power Wiring should comply with Local, National and International Regulation.
**System Information**
- **Indoor Units**: 13 of 31
- **Capacity**: 101.8%
- **Total Pipe Length**: 114 m
- **Indoor Cap. Tot./Sen.**: 36.67 kW/26.77 kW
- **Indoor Cap. Heat**: 33.95 kW
- **Building diversity**: 0%

**Piping Legend**
- Actual Length
- Liquid / Suction Gas diameters

**Branches Legend**
- **RBM-BY55E** (x9)
- **RBM-BY105E** (x3)

**Outdoor/Indoor Legend**
- **Model Name (Capacity Code)**
  - *Room name*
  - **Corrected Capacity**
  - **Tot./Sens./ Heat**

**Note**: It is the responsibility of the consultant or contractor, to verify and confirm that the equipment selection and system design is correct before installation.
2.NP
Floor: 4.NP - STŘECHA
Elevation: 0m

System Information
Indoor Units: 13 of 31
Capacity: 101.8%
Total Pipe Length: 114 m
Indoor Cap. Tot./Sen.: 36.67 kW/26.77 kW
Indoor Cap. Heat.: 33.95 kW
Building diversity: 0%

Outdoor/Indoor Legend
Model Name (Capacity Code)
*Room name
Corrected Capacity
Tot./Sens./ Heat.

Piping Legend
Actual Length
Liquid / Suction Gas diameters
Note: It is the responsibility of the consultant or contractor, to verify and confirm that the equipment selection and system design is correct before installation.

Branches Legend
a RBM-BY55E (x9)
b RBM-BY105E (x3)

MMY-MAP1406HT8P-E (14 HP)
36.67 33.95 kW

5 m
12.7 - 28.6 mm
2.NP

Control Wiring Legend
- Outdoor - Indoor Control Wiring* U1/U2 1.5mm² up to 1000m & 2.5mm² up to 2000m
- Central Control Wiring U3/U4 1.5mm² up to 1000m & 2.5mm² up to 2000m
- Outdoor Units Control Wiring U5/U6 0.5mm² to 2.5mm² up to 100m
- Remote Controller Wiring A/B 0.5mm² to 2.5mm² up to 500m (Wireless Remote Controller up to 400m). Group Control wiring is up to 200m

* 2 core, no polarity, shielded
Note: Power Wiring should comply with Local, National and International Regulation.

Branches Legend
- RBM-BY105E a (x3)
- RBM-BY55E b (x9)

Pipe diameters in mm

*Note: Pipe diameters in mm

Symbol Legend
- Control
- Power
- Remote Control
- Signal
- Rozvod chladiva

Control Wiring Legend
- Wiring Size and Length

Remote Control Wiring* A/B 0.5mm² to 2.5mm² up to 500m (Wireless Remote Controller up to 400m). Group Control wiring is up to 200m

Note: Power Wiring should comply with Local, National and International Regulation.
3.NP
Floor: 3.NP
Elevation: 1m below Outdoor Unit

System Information
Indoor Units: 10 of 31
Capacity: 111.1%
Total Pipe Length: 112 m
Indoor Cap. Tot./Sen.: 37.26 kW/26.1 kW
Indoor Cap. Heat: 34.48 kW
Building diversity: 0%

Outdoor/Indoor Legend
Model Name (Capacity Code)
*Room name
Corrected Capacity	Tot./Sen./ Heat.

Piping Legend
Actual Length
Liquid / Suction Gas diameters
Note: It is the responsibility of the consultant or contractor, to verify and confirm that the equipment selection and system design is correct before installation.

Branches Legend
a RBM-BY55E (x4)
b RBM-BY105E (x5)

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System Information
Indoor Units: 10 of 31
Capacity: 111.1%
Total Pipe Length: 112 m
Indoor Cap. Tot./Sen.: 37.26 kW/26.1 kW
Indoor Cap. Heat: 34.48 kW
Building diversity: 0%

Outdoor/Indoor Legend
Model Name (Capacity Code)
*Room name
Corrected Capacity
Tot./Sen./ Heat.

Piping Legend
Actual Length
Liquid / Suction Gas diameters
Note: It is the responsibility of the consultant or contractor, to verify and confirm that the equipment selection and system design is correct before installation.

Branches Legend
a  RBM-BY55E  (x4)
b  RBM-BY105E  (x5)

Floor: 4.NP - STŘECHA
Elevation: 0m

MMY-MAP1406HT8P-E (14 HP)
37.26  34.48 kW

7 m
12.7 - 28.6 mm
Toshiba DesignAIRS - Piping and Wiring Diagram

3.NP

Control Wiring Legend
- Outdoor - Indoor Control Wiring* U1/U2 1.5mm² up to 1000m & 2.5mm² up to 2000m
- Central Control Wiring* U3/U4 1.5mm² up to 1000m & 2.5mm² up to 2000m
- Outdoor Units Control Wiring* U5/U6 0.5mm² to 2.5mm² up to 100m
- Remote Controller Wiring* A/B 0.5mm² to 2.5mm² up to 500m (Wireless)

*Note: Pipe diameters in mm

Control Wiring Size and Length
- Rozvod chladiva*
- Signal
- Remote Control
- Power

Symbol Legend
- Control
- Remote Control
- Signal
- Rozvod chladiva*

Branches Legend
- RBM-BY105E a (x5)
- RBM-BY55E b (x4)

* 2 core, no polarity, shielded
Note: Power Wiring should comply with Local, National and International Regulation.
Toshiba Design - Schematic

4.NP
Floor: 4.NP
Elevation: 0m

System Information
Indoor Units: 13 of 31
Capacity: 123,6%
Total Pipe Length: 108.5 m
Indoor Cap. Tot./Sen.: 38.63 kW/27.26 kW
Indoor Cap. Heat.: 35.68 kW
Building diversity: 0%

Outdoor/Indoor Legend
Model Name (Capacity Code): *Room name
Corrected Capacity: Tot./Sens./Heat.

Piping Legend
Actual Length
Liquid / Suction Gas diameters
Note: It is the responsibility of the consultant or contractor, to verify and confirm that the equipment selection and system design is correct before installation.

Branches Legend
a RBM-BY55E (x6)  
b RBM-BY105E (x6)
Toshiba DesignAIRS - Piping and Wiring Diagram

**4.NP**

**Control Wiring Legend**
- Outdoor - Indoor Control Wiring*: U1/U2
- Central Control Wiring*: U3/U4
- Outdoor Units Control Wiring*: U5/U6
- Remote Controller Wiring*: A/B

**Label**
- Rozvod chladiva*

**Wiring Size and Length**
- 1.5mm² up to 1000m & 2.5mm² up to 2000m
- 0.5mm² to 2.5mm² up to 500m (Wireless)
- Remote Controller up to 400m. Group Control wiring is up to 200m

*Note: Pipe diameters in mm

**Symbol Legend**
- Control
- Power
- Remote Control
- Signal
- Rozvod chladiva*

**Branches Legend**

- **RBM-BY105E a**: (x6)
- **RBM-BY55E b**: (x6)

* 2 core, no polarity, shielded

Note: Power Wiring should comply with Local, National and International Regulation.
Toshiba Design - Piping and Wiring Diagram

4.NP

- MMU-AP0127MH-E (1.3HP)
  - 9,5 - 15,9
  - 5m
  - 6,4 - 9,5
  - 3m
  - 3,60/2,70
  - 4,00 kW
  - 2,91/2,09
  - 2,68 kW

- MMU-AP0157MH-E (1.7HP)
  - 6,4 - 9,5
  - 9m
  - 9,5 - 15,9
  - 5m
  - 6,4 - 12,7
  - 3m
  - 4,50/3,30
  - 5,00 kW
  - 3,61/2,53
  - 3,34 kW

- MMK-AP0077HP-E (0.8HP)
  - 2,20/1,70
  - 2,50 kW
  - 1,74/1,29
  - 1,66 kW

---

Project: Diplomová práce
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**System Information**
- **Indoor Units**: 1 of 36
- **Capacity**: 100,0%
- **Total Pipe Length**: 57 m
- **Indoor Cap. Tot./Sen.**: 39,81 kW/0 kW
- **Indoor Cap. Heat.**: 36,83 kW
- **Building diversity**: 0%

**Indoor/Outdoor Legend**
- **Model Name (Capacity Code)**
- **Room name**
- **Corrected Capacity**
- **Tot./Sens./ Heat.**

**Piping Legend**
- **Actual Length**
- **Liquid / Suction Gas diameters**

**Note:** It is the responsibility of the consultant or contractor, to verify and confirm that the equipment selection and system design is correct before installation.

---

**Branches Legend**

**Actual Length**
- **Liquid / Suction Gas diameters**

**Note:** It is the responsibility of the consultant or contractor, to verify and confirm that the equipment selection and system design is correct before installation.

---

**Toshiba Design AIRS - Schematic**

**VZT JEDNOTKA**
- **Floor**: 1.PP
- **Elevation**: 11m below Outdoor Unit

**Outdoor Unit**
- **Model**: MM-18HP DXC010 & DXC012 (16 HP)
- **Capacity**: 39,81 / 0 kW
- **Total Pipe Length**: 39 m
- **Diameters**: 15.9 - 28.6 mm
- **Elevation**: 11m below Outdoor Unit

**Floor**: 1.PP

---

**Project**: Diplomová práce
**Registered To**: AB Clima
**v1.0.0.111**
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**System Information**

<table>
<thead>
<tr>
<th>Indoor Units</th>
<th>1 of 36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>100.0%</td>
</tr>
<tr>
<td>Total Pipe Length</td>
<td>57 m</td>
</tr>
<tr>
<td>Indoor Cap. Tot./Sen.</td>
<td>39.81 kW/0 kW</td>
</tr>
<tr>
<td>Indoor Cap. Heat.</td>
<td>36.83 kW</td>
</tr>
<tr>
<td>Building diversity</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Outdoor/Indoor Legend**

- Model Name (Capacity Code)
- Corrected Capacity
- Room name
- Tot./Sens./ Heat.

**Piping Legend**

- Actual Length
- Liquid / Suction Gas diameters
- Note: It is the responsibility of the consultant or contractor, to verify and confirm that the equipment selection and system design is correct before installation.

**Branches Legend**

- 

**Toshiba Design AIRS - Schematic**

**VZT JEDNOTKA**

Floor: 4.NP  Elevation: 0m

- Model Name: MMY-MAP1606HT8P-E (16 HP)
- Corrected Capacity: 39.81 kW
- Room name: 39.81 kW
- Tot./Sens./ Heat.: 36.83 kW

- Building diversity: 0%

**System Information**

- Model Name: MMY-MAP1606HT8P-E (16 HP)
- Corrected Capacity: 39.81 kW
- Room name: 39.81 kW
- Tot./Sens./ Heat.: 36.83 kW

**Piping Legend**

- Actual Length
- Liquid / Suction Gas diameters
- Note: It is the responsibility of the consultant or contractor, to verify and confirm that the equipment selection and system design is correct before installation.

**Branches Legend**

- 

**Toshiba Design AIRS - Schematic**

**VZT JEDNOTKA**

Floor: 4.NP  Elevation: 0m

- Model Name: MMY-MAP1606HT8P-E (16 HP)
- Corrected Capacity: 39.81 kW
- Room name: 39.81 kW
- Tot./Sens./ Heat.: 36.83 kW

- Building diversity: 0%
Toshiba DesignAIRS - Piping and Wiring Diagram

VZT JEDNOTKA

Control Wiring Legend

<table>
<thead>
<tr>
<th>Label</th>
<th>Wiring Size and Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>U1/U2</td>
<td>1.5mm² up to 1000m &amp; 2.5mm² up to 2000m</td>
</tr>
<tr>
<td>U3/U4</td>
<td>1.5mm² up to 1000m &amp; 2.5mm² up to 2000m</td>
</tr>
<tr>
<td>U5/U6</td>
<td>0.5mm² to 2.5mm² up to 100m</td>
</tr>
<tr>
<td>A/B</td>
<td>0.5mm² to 2.5mm² up to 500m (Wireless)</td>
</tr>
</tbody>
</table>

Central Control Wiring

Outdoor Units Control Wiring

Remote Controller Wiring

*Note: Power Wiring should comply with Local, National and International Regulation.

Symbol Legend

Branches Legend

RBM-BY205E a (x1)

Rev.

Toshiba Design

- Piping and Wiring Diagram

v1.0.0.111

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06.01 CHLAZENÍ
SERVER 3.NP

3×4,0mm² (NAPÁJEcí KABELÁŽ) L, N, PE
2,3kW/10,2A

3×1,5mm² (NAPÁJEcí KABELÁŽ)

4×1,5mm² (KOMUNIKAČNÍ KABELÁŽ)

F1, F2
L, N, PE

6.02
Vnitřní Jednotka
RAV-RM801KRTP-E

11m
ø9,5mm/ø15,9mm

Nástěnný Kabelový Ovladač

EXTERIĚR
VENKOVNÍ JEDNOTKA
RAV-OM801ATP-E